Managing APS Facility Procedures

Changes made in this revision:

- Changed review period from 1 year to 2 years
- Removed D. Mills, APS/Deputy Director, X-ray Science, as a reviewer
- Updated statement regarding review period.
- Added to the policy: Authors will identify documents/records generated as a result of performing the procedure and how they will be controlled with a reference to the APS policy Controlling APS Documents.
- Added to the procedure, MTE/QAR review section: The QAR or designee will ensure, as appropriate, that the procedure under review implements the APS Control of Measurement and Test Equipment procedure.
- Added to the procedure references: Controlling APS Documents and APS Control of Measurement and Test Equipment.
- In the procedure Appendix A template: moved the *results and records documentation* from Closeout section to a new Documents/Records section.
- Minor formatting edits.

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Managing APS Facility Procedures

Policy

Each group at the APS shall maintain documented procedures to ensure a safe work environment and reliable and efficient operations.

This policy and associated procedure apply to APS mission/safety critical procedures, namely those that are required to ensure a safe work environment and reliable, efficient operations at the APS. This procedure need not be followed for work practices that rely on knowledgeable trained worker, provided that the unavailability of the worker will not impact safe, reliable, efficient operations at the APS. A graded approach is required in the implementation of this policy. More rigor is required for mission-critical procedures than for procedures that have limited safety or operational impact on APS operations or on experimental activities

APS managers shall ensure for systems/processes that they are responsible for that the mission/safety critical procedures:

- are complete and kept current,
- are available to workers who currently use them and to others that might need them in the future, and
- are maintained in the central APS integrated content management system (ICMS).

APS management shall designate Procedure Administrators (PA) who shall:

- be responsible for loading procedures and associated information required for managing the procedures in the APS ICMS,
- initiate and monitor document system review workflow for their organization,
- ensure approved procedures are posted,
- ensure that document system metadata includes at a minimum an effective date and expiration date or review period for each procedure, and
- assist their organization in notifying effected groups that a new or revised procedure is in effect.

Typically, facility procedures should be reviewed on a triennial or more frequent basis.

If a reviewer disapproves a procedure, the document is routed back to the PA and the PA returns it to the author. The author is responsible for addressing any issues and resubmitting the document to the PA for rerouting for approval.

A uniform format and style for APS Facility Operations Procedures based upon the DOE Writer's Guide for Technical Procedures, DOE-STD-1029-92, shall be used for all mission/safety critical procedures. Authors are encouraged to use the same format for

noncritical procedures as well. The template used for APS operational procedures, which is based on the DOE guide and this procedure, is ICMS document APS_1191216. The native file can be downloaded and used to create an APS procedure.

Authors will identify documents/records generated as a result of performing the procedure (e.g., forms, checklist, work permits, approval/authorizations, etc.) and how they will be controlled (e.g., responsible custodian, location, for/media, and retention requirements). (The APS policy can be found in Controlling APS Documents.)

Authors shall include specific control measures (e.g., the particular type and, requirements for use of, personal protection equipment) for the specific hazards identified in procedures and shall ensure that these measures are included in the appropriate action steps. Generic statements, such as "controls are defined in the ANL ESH Manual" should be avoided and used when specific controls cannot be defined. Safety related procedures are reviewed by the ESH Coordinators, who shall verify that appropriate specific controls have been included. (Procedure Appendix B is a guideline for describing hazard control measures in procedures.)

Required reviews/approvals

1. Author
2. Author's supervisor – the supervisor's approval is a certification that the procedure will safely meet technical/operational requirements
3. Supervisor(s) of employee(s) that will carry out the procedure (if different than above) – their approval confirms the acceptance of the responsibilities and that the assignment is appropriate (may be the same as above author)
4. Author's Division Management (Division Director, Deputy Director, or Associate/Assistant Director), and
5. Other case-specific required reviews:

Potentially Impacted System/Equipment	**Required review and approval**
Personnel safety	Author's Division ESH Coordinator
Accelerator systems	Affected Machine manager(s)
Safety interlocks	Safety Interlock Group Leader
Safety interlock system design	APS Radiation Safety Policy Committee Chair (The Chair's approval represents the committee's approval.)
Radiation shielding	Accelerator Health Physicists
Measurement and test equipment	QA Representative

If a procedure is part of an APS User Policy and Procedure then AES Technical Operations Specialist and APS Director review and approval is required.

Optional reviews

The author and any reviewer may seek the advice of subject matter experts, APS or ANL safety committees, or APS technical panels.

Corrections/Opportunities for Improvement

Any user or reviewer of a facility procedure: 1) shall advise a PA of if there are errors or omissions in a procedure and 2) is encouraged to advise a PA of opportunities for improvement. The PAs will work with the author to address the feedback.

A PP Admin may make minor corrections without requiring re-review/re-approval of the procedure. A minor change is one that does not have the potential to change the meaning of the procedure and includes changes such as correcting spelling, grammar, or other typographical errors; limited text clarifications; or minor format changes. If there is the potential for changing the meaning of the procedure then re-review/re-approval is required. Changes and the reason for changes must be recorded in the procedure's metadata in ICMS.

Procedure

1 Introduction

1.1 Purpose

This procedure defines the workflow for establishing and maintaining APS procedures.

1.2 Scope

This procedure applies to APS procedures required to ensure a safe work environment and reliable, efficient operations at the APS. This procedure need not be followed for work practices that rely on knowledgeable trained worker, provided that the unavailability of the worker will not impact safe, reliable, efficient operations at the APS.

1.3 Applicability

This procedure is to be followed for procedures required for the safe, reliable, and efficient operations at the APS.

1.4 References - Source Requirements

APS Control of Measuring and Test Equipment
APS Quality Assurance Program Plan
Controlling APS Documents
DOE Standard: Writer's Guide for Technical Procedures (DOE-STD-1029-92)

2 Preparation - Prerequisite Actions

Authors should draft, with a graded approach, procedures based upon the guidance in DOE-STD-1029-92 (organization summary provided in Appendix A of this document). More rigor is required for mission-critical procedures than for procedures that have limited safety or operational impact. Authors should consider a graded approach such as that found in Appendix A of the APS Quality Assurance Program Plan.

If there is an error or omission in a procedure, the worker should ensure that the work process is executed safely and advise a Procedure Administrator (PA) of the need for correction/amendment.

To guarantee use of the latest copy of a procedure, print it from ICMS. To verify that a previously printed copy is current, compare its revision number with the revision number on the procedure in ICMS.

3 Acceptance Criteria

Section 4.3 defines required approvals with final approval by APS Division Management (Division Director, Deputy Director, or Associate/Assistant Director).

4 Procedure Action Steps - Performance

4.1 The author drafts or revises the procedure. [An author will be notified of the pending expiration of a procedure in the central document system and the date of the expiration.]

4.2 New/revised procedure is loaded by a PA into the APS central document management system and routed for approval.

4.2a If the procedure is a **New Procedure:**

1. The author submits the proposed procedure to a PA and provides the PA with the metadata values, including workflow/review requirements, for the APS document management system.
2. The PA checks the procedure into the APS central document system and completes the data input.
3. The PA initiates a workflow approval according to section 4.3.

4.2b If the procedure is a **revision or update** of an existing procedure:

1. The author submits the revised procedure to the PA and provides the PA with the updated metadata values and workflow/review requirements for the APS electronic document management system.
2. The PA checks out the current procedure from the central document system and completes the data input.
3. The PA initiates a workflow approval of the revision according to section 4.3.

4.3 Required Reviews/Approvals

The general sequence of review and approvals is:

1. Author and the technical groups that will carry out the procedure,
2. Safety and QA oversight, and
3. Management endorsement.

As needed, any reviewer may seek the advice of subject matter experts, APS or ANL safety committees, or APS technical panels.

If a reviewer disapproves a procedure, then it is routed back to the PA, the author is responsible for addressing any issues, and the PA will return to step 4.1 and reroute for approval.

4.3.1 Author – verifies that the correct version/revision is in workflow.

4.3.2 Author's supervisor (or designee) – certifies that the procedure will safely meet technical/operational requirements or disapproves the procedure.

4.3.3 Supervisor(s) of employee(s) that will carry out the procedure (if different than above) (or designee) – confirm(s) the acceptance of the responsibilities and that the assignment is appropriate (may be the same as above author).

4.3.4 Case Specific Reviews and Approvals
Each reviewer is verifying that for their subject area that the technical content is correct and/or safety concerns have been adequately addressed. The default will be to route the procedure for the case-specific safety and QA reviews listed in this section (4.3.4) in parallel.

4.3.4.1 Personnel Safety – ES&H Coordinator Review
IF the procedure involves activities or changes to any system that provides personnel safety protection and/or describes hazard control measures (i.e., LOTO required, radiation survey required, radioactive equipment, radiation shielding, hazardous materials, safety interlocks including ACIS and PSS, use of personal protection equipment, etc.),

THEN the procedure is reviewed and approved or disapproved by the responsible Divisions' ES&H Coordinator or designee.

4.3.4.2 Safety Interlocks – APS Radiation Safety Policy and Procedures Committee Review

IF the procedure involves either:

Prescribes use, maintenance, modification or testing of the accelerator's Access Control Interlock Systems (ACIS),
or
Prescribes use, maintenance, modification or testing of the beamline's Personnel Safety Systems (PSS),

THEN the procedure is reviewed and approved or disapproved by the Chair of the APS Radiation Safety Policy and Procedures Committee or designee.

4.3.4.3 Radiation Shielding – Accelerator Health Physicists Review

IF the procedure might impact radiation shielding, handling radioactive materials or requiring radiation survey;

THEN the procedure is reviewed and approved or disapproved by the Accelerator Health Physicists assigned to the APS or designee.

4.3.4.4 Accelerator Systems – Machine Manager Review

IF the procedure entails manipulation (steering, kicking, exciting, etc.) of a charged particle beam,

THEN the procedure is reviewed and approved or disapproved by the person(s) designated as responsible for the overall performance of the affected accelerators or designee as listed below:

Affected Device	**Reviewer**
Linac	Linac Manger
LET, PAR	PAR Manager
HET, Synchrotron	Synchrotron Manager
Storage Ring	Storage Ring Manager

4.3.4.5 APS Measurement and Test Equipment – QA Representative Review

IF the procedure involves:

- The use of measurement and test equipment (MTE) for the verification of a Personnel Safety System, Machine Protection System, Radiation Shielding Component, or Radiation Safety System as defined by APS Procedure #1-01304,
- The use of MTE to accept APS-purchased or APS-built hardware that could impact the ability of the APS to provide beam to the users,
- The use of MTE for mission-critical applications as defined by the author's Group Leader, or
- Calibration procedures for MTE;

THEN the procedure is reviewed and approved or disapproved by an APS QA Representative (QAR) or designee. The QAR or designee will ensure, as appropriate, that the procedure under review implements the APS Control of Measurement and Test Equipment procedure.

4.3.4.6 User Policies & Procedures – APS Director Review

IF the procedure is part of APS User Policies and Procedures,

THEN the procedure is reviewed and approved or disapproved by the AES-Technical Operations Specialist and the APS Director or designee.

4.3.5 Final Management Reviews and Approvals
For purposes of this procedure, an Associate or Assistant Division Director or Division Director who has management responsibility for a facility impacted by the procedure or who has line management responsibility for workers that will implement the procedure is considered to be a "responsible" ADD or DD and their review and approval of the procedure is required.

If the Procedure is part of APS User Policies and Procedures then the AES-DD shall be the "responsible" Director.

4.3.6 Notice of approval
Notice of final approval is posted to the contributing PA and others who subscribe to the document.

4.4 Posting of approved procedure
When all of the required approvals have been obtained, the procedure is posted online.

5 Closeout - Post Performance Activity

The procedure becomes effective upon posting on the APS Policies and Procedures web site.

If during the execution of a procedure there are errors, omissions, or opportunities for improvement identified, the worker should advise a PA of the need for correction/amendment.

6 Appendices

Appendix A – APS Procedures Standard Format
Appendix B – Guidelines for Describing Hazard Control Measures

Appendix A - APS Procedures Standard Format

APS Procedures Standard Organization

The DOE Standard: Writer's Guide for Technical Procedures (DOE-STD-1029-92) should be consulted for guidance on style and descriptions of content requirements.

The template used for APS operational procedures, which is based on the DOE guide and this procedure, is ICMS document APS_1191216. The native file can be downloaded and used to create an APS procedure.

Listed below are the contents of an APS standard procedure. Not all procedures require each of these sections. If a procedure does not need an element, do not include it.

1. **Coversheet**
   - includes a simple descriptive title to identify system, equipment, process or activity
   - includes information that differentiates the procedure from other procedures
2. **Revision Status**
   - include revision number on each page
   - a clear, simple means to identify changes
3. **Table of Contents**
4. **Introduction**
   - should address purpose, scope, and applicability
     - the purpose is the goal to be achieved by performing the procedure
     - the scope describes the activities covered, or not covered, by the procedure
     - the applicability specifies the conditions that require the procedure
   - states type of procedure, e.g., administrative, step-by-step work instructions
5. **References - Source Requirements**
6. **Hazardous Conditions - Precautions and Limitations**
   - informs the user of hazardous conditions and their potential effect
   - delineated precautions that affect the entire procedure or occur at more than one point
7. **Preparation - Prerequisite Actions**
   - planning/coordination (e.g., training, pre-job meeting, etc.)
   - identification of documents that will be needed at job site
   - special tools that will be required
   - field preparations (e.g., LOTO)

- identifies approvals and notifications that must be provided before initiating the procedure

8. Acceptance Criteria

- basis for determining whether an activity has succeeded or failed

9. Procedure Action Steps - Performance

10. Closeout - Post-performance Activity

- tests and restoration of systems to desired configurations

11. Documents/Records Created by this Procedure

- identify documents/records created by the execution of the procedure, who is responsible for the document/record, and how they are managed/controlled:

Description of Document/Record	Custodian	Storage Location and Medium	Retention Requirement

12. Appendices

- reference appendices in the text of the procedure
- include forms, table, figures, and check lists that are too large to incorporate in the sequence of action steps.

Appendix B - Guideline for Describing Hazard Control Measures

The following are acceptable for specifying hazard controls:

1. Include an action step to initiate the hazard control immediately preceding the action step involving the hazard. (For example: insert an action step of "don nitrile gloves" immediately before a step involving handling an item in a solvent solution.)
2. Include warnings and cautions in the procedure to attract attention to information that is essential to safe performance. Do not embed action steps in warnings or cautions. Refer to the DOE standard, section 4.10 for additional guidance in preparing warnings and cautions[1]. Warnings alert users to potential hazards to personnel. Cautions alert users to potential hazards to products or equipment.
3. Write precautions and limitations to inform users of hazardous conditions and their potential effects and include these in the Hazard Control – Precautions and Limitations section of the procedure. This section should not include user actions but may include hazards that may be present in more than one point in the procedure. Precautions (a) alert procedure users to actions and conditions that represent potential hazards to personnel or possible damage to equipment or (b) establish abnormal conditions. Limitations define boundaries that are not to be exceeded.[1] (For example the Hazard Controls section can describe personal protective equipment or other hazard controls required for the tasks or areas that the tasks are to be performed within.)
4. Include a list in the Hazard Control – Precautions and Limitations section identifying hazard controls and explicit personnel protective equipment needed for the work to be performed.

[1] DOE Standard: Writer's Guide for Technical Procedures (DOE-STD-1029-92)

Any improvements or corrections to this procedure may be submitted here
(http://www.aps.anl.gov/Internal/Policies_and_Procedures/comment_form.php)